

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF ENVIRONMENTAL QUALITY
POUCH O, JUNEAU, ALASKA 99811

ARCO FS2 1d
BILL SHEFFIELD, GOVERNOR

Telephone: (907)

Address:

465-2609

May 31, 1984

*Agree with letter
keep with application*
CERTIFIED MAIL
RETURN RECEIPT
REQUESTED

RECEIVED

JUN 11 1984

AIR PROGRAMS
BRANCH

Mr. L.E. Tate
Vice President
Engineering and Extension Exploration
ARCO Alaska Inc.
P.O. Box 360
Anchorage, Alaska 99510

RE: Air Quality Control Permits for the Prudhoe Bay Field

Dear Mr. Tate:

The department has received your staff's verbal request of February 16, 1984, for modification of six Air Quality Control Permits in the Prudhoe Bay Field. After review of the information submitted in the application and previous submittals as listed on the various permits, the following Air Quality Control Permits are granted:

<u>Facility Name</u>	<u>Former Permit Number</u>	<u>New Permit Number</u>
Flow Station #1	8230-AA011	8436-AA001
Flow Station #2	8230-AA012	8436-AA002
Flow Station #3	8230-AA013	8436-AA003
Central Comp. Plant	8336-AA003	8436-AA004
Seawater Treat. Plant	8230-AA014	8436-AA005
Injection Plant East	AQC-532A	8436-AA006

Please note there are twelve conditions of each permit, and violation of any one of these may result in revocation or suspension of the permit in accordance with 18 AAC 50.310. The permits expire April 30, 1987, and you must request renewal at least thirty days prior to that date for continued operation of the facilities.

USEPA REG



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The permits allow for the operation of the facilities only as described in the transmittals from your office as listed in each permit and as amended by the permit requirements. Any change in the proposed equipment for each facility or any change which would cause an increase in air pollution emissions would require an application for an amended permit.

The department has determined that this modification request will result in no increase in total air emissions from the field, and no appreciable increases in ambient air impacts near the various facilities. Therefore these administrative amendments to the field air quality permits require no public notification. Also, for the issuance of these permits we have incorporated applicable requirements and conditions of the Environmental Protection Agency's Prevention of Significant Deterioration permits.

Air quality impact projections for north slope activities have recently been based on the Industrial Source Complex (ISC) Model. These results indicate that the maximum concentration of nitrogen dioxide directly downwind from existing sources can reach 62% of the Alaska ambient air quality standard. Recent field evaluations of the ISC model during a plume downwash situation indicates that the model often underpredicts actual measured concentrations by a factor of two.

Although many conservative factors have been incorporated in your past modeling studies, a question still exists regarding the actual ambient pollution levels occurring on the north slope from operation of your facilities. This question is not only the result of recent evaluations of model performance but also unique facility and climatological factors on the north slope which mathematically strain the simulation capabilities of the ISC model.

Compliance with the ambient standard must not only be demonstrated but must be based upon reliable techniques. An irrefutable method to ascertain air quality conditions is to perform actual field monitoring of the pollution concentrations. Until now, field monitoring would have been of very limited use since a large number of permitted sources were not operating. The spring of 1985 marks a significant milestone in the number of operating sources.

These uncertainties regarding the actual air quality impacts not only apply to the Prudhoe facilities but to the majority of north slope oil and gas production facilities. Hence a monitoring program to resolve the questions would be most efficient if designed on an areawide basis. The enclosed permits contain a requirement for ambient air quality monitoring.

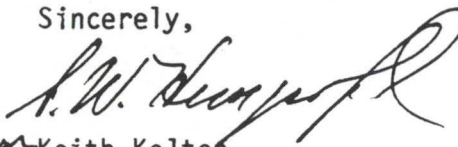
An areawide plan should contain a monitoring proposal for both long term and special study sites covering both the background levels and spots identified by computer modeling as having the potential for the highest pollution impacts. Monitoring must conform to applicable state quality assurance and data analysis requirements. A preliminary plan addressing these points is to be submitted to the department by August 1, 1984.

May 31, 1984

Even though actual monitoring is the most desirable manner to resolve these concerns, other comprehensive studies independent of or in supplement to field monitoring may be proposed in the plan.

Any person who disagrees with this decision may appeal the decision requesting an adjudicatory hearing using the procedures contained in 18 ACC 15.200-310. Hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 3220 Hospital Drive, Pouch O, Juneau, Alaska 99811, within thirty days of receipt of this letter. If a hearing is not requested within thirty days, the right to appeal is waived and the decision becomes final.

Sincerely,


Keith Kelton
Division Director

KK/DE/ne

Enclosures: Air Quality Control Permits 8436-AA001, 8436-AA002, 8436-AA003, 8436-AA004, 8436-AA005 and 8436-AA006

cc: Ron Kreizenbeck, EPA A00
Larry Dietrick, ADEC NSDO
Mike Johnston, EPA Region X
Doug Lowery, ADEC NRO
Mark Wagoner, SOHIO

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY CONTROL
PERMIT TO OPERATE

Permit No. 8436-AA002
Rescinds Permit No. 8230-AA012

Date of Issue: May 31, 1984

The Department of Environmental Conservation, under authority of AS 46.03 and 18 AAC 50.400, issues an Air Quality Control Permit to Operate to

ARCO OIL AND GAS COMPANY
P.O. BOX 100360
ANCHORAGE, ALASKA 99510

for the operation of Flow Station No. 2, associated fuel burning equipment and flaring system as listed in Exhibit A of this permit,

as described in the ARCO permit application dated June 16, 1975, with attachment, application dated December 19, 1978, PSD permit application submitted to EPA on August 2, 1978, ARCO letter dated May 16, 1979, EPA permit PSD-X79-05 dated May 17, 1979, as modified by EPA letters dated February 5, 1981, and November 3, 1983, Radian submittal "PSD Permit Application for the Prudhoe Bay Unit Produced Water Injection, Low Pressure Separation and Artificial Lift Project" dated September 28, 1979, ARCO letter with attachments dated March 5, 1980, EPA permit PSD-X80-09 dated June 13, 1980, as modified by EPA letters dated February 5, 1981, May 7, 1981, and November 3, 1983, Radian submittal dated December 3, 1980, Radian submittal "PSD Permit Application for New Sources to be Added to Existing and Previously Permitted Facilities in the Prudhoe Bay Unit (PSD IV)" dated January 30, 1981, Radian submittal "Air Quality Impacts of the Prudhoe Bay Unit PSD IV Sources as Estimated by the Texas Climatological Model (TCM-1)" dated June 1, 1981, ARCO Alaska Inc., letter with attachments dated August 19, 1981, EPA permit PSD-X81-13 dated September 29, 1981, and ARCO Alaska, Inc., letter to EPA with attachment dated December 5, 1983.

The facility location is Section 11, T11N, R14E (UM), Prudhoe Bay, Alaska.

The following conditions shall apply:

1. If on-site construction for the expansion equipment has not begun within eighteen months of the date of issue of this permit, permittee must submit for approval an updated control technology analysis and construction schedule. The Department's Northern Regional Office shall be notified in writing within fifteen days of commencement of construction.
2. Permittee shall comply with Ambient Air Quality Standards and Increments set by State Air Quality Control Regulation 18 AAC 50.020 and applicable emission limitations set by 18 AAC 50.050 and Exhibit B.
3. Permittee shall maintain and operate fuel burning equipment to provide optimum fuel burning efficiency during all operating periods.
4. An Air Contaminant Emission Report as described in Exhibit A shall be submitted to the Department's Northern Regional Office, Pouch 1601, Fairbanks, Alaska 99707, by July 30 and January 30 each year.

5. Permittee shall notify the Department's Northern Regional Office by telephone or telex as soon as possible when equipment failures or operating conditions result in the production of black smoke from flaring. Report the duration, nature of occurrence, amount of material burnt, and steps taken to minimize emissions and avoid recurrence. A written monthly summary of flaring incidences shall be submitted to the Regional Supervisor, Northern Regional Office, within five days after the end of each month.
6. Permittee shall submit for approval by January 31, 1985, a plan describing a periodic monitoring program using a portable CO or O₂ analyzer for process heaters larger than 43mm BTU/hr.
7. Source tests shall be performed within 60 days after reaching normal operating capacity but not later than 180 days after initial startup of the applicable source unless testing has already been done or approved for alternate dates. Prior approval by the Department and 30 days notification of each test is required. One of each kind of process heaters and turbines must be tested. Alternate test methods may be proposed for written approval from the Department.
8. Permittee shall report the results of each NO_x emissions test performed pursuant to 40 CFR 60.335, in the format set by Appendix IV-3 of the State Air Quality Plan, within thirty days after each test. Additional tests may be required if deemed necessary to ascertain compliance with applicable standards.
9. Permittee shall perform ambient air quality monitoring to determine the actual air quality impacts resulting from the operation of the permitted Prudhoe Bay facilities. A monitoring plan shall be developed and designed to address the concerns identified in the cover letter of this permit and shall be submitted to the Department's Northern Regional Office for review by August 1, 1984. Actual field monitoring shall begin in 1985.
10. Permittee shall maintain test results, monitoring instrument recorder charts and other applicable data in an active file for not less than one year, and have them accessible on request to the Department for not less than three years.
11. The Department's representative, with permittee's approval, is allowed access to permittee's facilities to conduct inspections or tests to determine compliance with this permit and State environmental laws and regulations.
12. A copy of this permit shall be clearly displayed, and the State Air Quality Control Regulations 18 AAC 50 kept on file, at the permitted facility location.

This Permit expires 30 April 1987 and may be revoked or suspended in accordance with 18 AAC 50.310.

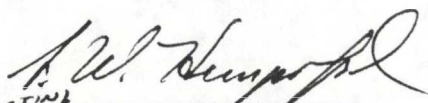

ACTIVE
Division Director

EXHIBIT A
AIR QUALITY CONTROL
PERMIT TO OPERATE NO. 8436-AA002
AIR CONTAMINANT EMISSION REPORT

A notarized Air Contaminant Emission Report shall be submitted to the Department's Northern Regional Office, Pouch 1601, Fairbanks, Alaska 99707, semiannually by January 30 and July 30 each year. The report shall include, but not be limited to, the following information:

NAME OF FIRM
LOCATION OF FACILITIES
PERIOD OF REPORT

	Semiannual Total
1. DAYS OPERATED	number of days per unit listed by group, unit number, and rating
2. FUEL CONSUMPTION	(Report a change in type of fuel and tests or analyses performed)
Group I 2 gas turbines installed prior to August 7, 1977, and 7 gas turbines installed after August 7, 1977	million cubic feet
Group II 6 gas heaters installed prior to August 7, 1977, and 1 gas heater installed after August 7, 1977	million cubic feet
Group III 1 emergency diesel generator	gallons
Group IV flaring system total pilot gas	million cubic feet
3. Attach a summary of any monitoring data or excess emissions reports prepared for the requirements set by 40 CFR 60.334, or condition 6 of the permit.	
4. Attach a detailed description of equipment or operating conditions which may adversely affect air contaminant emissions except for flaring incidences which are already covered by condition 5 of the permit. Include such information as: date of incident, duration, nature of the occurrence, equipment failures, steps taken to minimize emissions, measures taken to avoid recurrence, and a general description of the weather. A separate report is required for each incident.	
5. Signature of authorized agent preceded by the statement: "I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate."	

EXHIBIT B
AIR QUALITY CONTROL
PERMIT TO OPERATE 8436-AA002

AIR CONTAMINANT EMISSION LIMITATIONS

Exhaust conditions shall be in accordance with the information submitted. In addition to the applicable limitations set by 18 AAC 50.050, the emission limitations for the sources installed after August 7, 1977, are listed below:

SOURCE	POLLUTANT	EMISSION LIMITATION
Gas Turbines	NO _x	150 (14.4/Y)ppm*
	CO	109 lb/10 ⁶ scf of fuel
Process Heaters	CO	0.018 lb/10 ⁶ BTU
> 43 mm BTU/hr	NO _x	0.08 lb/10 ⁶ BTU
< 43 mm BTU/hr	NO _x	0.10 lb/10 ⁶ BTU**

* NO_x emission factor for gas-fired turbines is modified by an efficiency factor Y (manufacturer's rated heat rate at rated peak load) which cannot exceed 14.4 kilojoules/watt-hour based at 15% oxygen on a dry basis.

**Based on 4% excess oxygen